

Alternatively, in some examples, the billboard linker **128** is incorporated into another electronic control unit (ECU) with its own processor **510** and memory **512**. Further, in some examples, the billboard linker **128** may be incorporated into the processor **402** of the mobile device **102** that communicates with the on-board computing platform **502** via the communication module **412** of the mobile device **102** and the communication module **114** of the vehicle **100**. The processor **510** may be any suitable processing device or set of processing devices such as, but not limited to, a micro-processor, a microcontroller-based platform, an integrated circuit, one or more field programmable gate arrays (FPGAs), and/or one or more application-specific integrated circuits (ASICs). The memory **512** may be volatile memory (e.g., RAM including non-volatile RAM, magnetic RAM, ferroelectric RAM, etc.), non-volatile memory (e.g., disk memory, FLASH memory, EPROMs, EEPROMs, memristor-based non-volatile solid-state memory, etc.), unalterable memory (e.g., EPROMs), read-only memory, and/or high-capacity storage devices (e.g., hard drives, solid state drives, etc.). In some examples, the memory **512** includes multiple kinds of memory, particularly volatile memory and non-volatile memory.

**[0053]** The memory **512** is computer readable media on which one or more sets of instructions, such as the software for operating the methods of the present disclosure, can be embedded. The instructions may embody one or more of the methods or logic as described herein. For example, the instructions reside completely, or at least partially, within any one or more of the memory **512**, the computer readable medium, and/or within the processor **510** during execution of the instructions.

**[0054]** The sensors **504** are arranged in and around the vehicle **100** to monitor properties of the vehicle **100** and/or an environment in which the vehicle **100** is located. One or more of the sensors **504** may be mounted to measure properties around an exterior of the vehicle **100**. Additionally or alternatively, one or more of the sensors **504** may be mounted inside a cabin of the vehicle **100** or in a body of the vehicle **100** (e.g., an engine compartment, wheel wells, etc.) to measure properties in an interior of the vehicle **100**. For example, the sensors **504** include accelerometers, odometers, tachometers, pitch and yaw sensors, wheel speed sensors, microphones, tire pressure sensors, biometric sensors and/or sensors of any other suitable type. In the illustrated example, the sensors **504** include the microphone **124** and the camera **118**.

**[0055]** The ECUs **506** monitor and control the subsystems of the vehicle **100**. For example, the ECUs **506** are discrete sets of electronics that include their own circuit(s) (e.g., integrated circuits, microprocessors, memory, storage, etc.) and firmware, sensors, actuators, and/or mounting hardware. The ECUs **506** communicate and exchange information via a vehicle data bus (e.g., the vehicle data bus **508**). Additionally, the ECUs **506** may communicate properties (e.g., status of the ECUs **506**, sensor readings, control state, error and diagnostic codes, etc.) to and/or receive requests from each other. For example, the vehicle **100** may have seventy or more of the ECUs **506** that are positioned in various locations around the vehicle **100** and are communicatively coupled by the vehicle data bus **508**. In the illustrated example, the ECUs **506** include a body control module **514** and a telematic control unit **516**. The body control module **514** controls one or more subsystems throughout the vehicle

**100**, such as power windows, power locks, an immobilizer system, power mirrors, etc. For example, the body control module **514** includes circuits that drive one or more of relays (e.g., to control wiper fluid, etc.), brushed direct current (DC) motors (e.g., to control power seats, power locks, power windows, wipers, etc.), stepper motors, LEDs, etc. The telematic control unit **516** controls tracking of the vehicle **100**, for example, utilizing data received by the GPS receiver **116** of the vehicle **100**.

**[0056]** The vehicle data bus **508** communicatively couples the on-board computing platform **502**, the infotainment head unit **112**, the GPS receiver **116**, the sensors **504**, and the ECUs **506**. In some examples, the vehicle data bus **508** includes one or more data buses. The vehicle data bus **508** may be implemented in accordance with a controller area network (CAN) bus protocol as defined by International Standards Organization (ISO) 11898-1, a Media Oriented Systems Transport (MOST) bus protocol, a CAN flexible data (CAN-FD) bus protocol (ISO 11898-7) and/a K-line bus protocol (ISO 9141 and ISO 14230-1), and/or an Ethernet™ bus protocol IEEE 802.3 (2002 onwards), etc.

**[0057]** FIG. 6 is a flowchart of an example method **600** to generate a billboard interface to be presented via a display of a vehicle. The flowchart of FIG. 6 is representative of machine readable instructions that are stored in memory (such as the memory **404** of FIG. 4 and/or the memory **512** of FIG. 5) and include one or more programs which, when executed by a processor (such as the processor **402** of FIG. 4 and/or the processor **510** of FIG. 5), cause the vehicle **100** and/or the mobile device **102** to implement the example billboard linker **128** of FIGS. 1 and 5 and/or the example billboard segmenter **126** of FIGS. 1 and 4. While the example program(s) is/are described with reference to the flowchart illustrated in FIG. 6, many other methods of implementing the example billboard segmenter **126** and/or the example billboard linker **128** may alternatively be used. For example, the order of execution of the blocks may be rearranged, changed, eliminated, and/or combined to perform the method **600**. Further, because the method **600** is disclosed in connection with the components of FIGS. 1-5, some functions of those components will not be described in detail below.

**[0058]** Initially, at block **602**, the camera **408** of the mobile device **102** obtains the image **200** of the advertisement **110** of the billboard **108**. At block **604**, the billboard segmenter **126** identifies a segment of the image **200**. For example, the billboard segmenter **126** includes an image recognition system that identifies the first segment **202** of the segments **202**, **204**, **206**, **208**, **210**, **212** utilizing a deep neural network algorithm.

**[0059]** At block **606**, the billboard segmenter **126** determines whether the segment of the image **200** is associated with an event. For example, the billboard segmenter **126** compares the segment of the image **200** to segment entries of a database that also includes corresponding event entries. If the segment of the image **200** matches one of the segment entries of the database, the billboard segmenter **126** determines that an event is associated with the segment of the image **200** and proceeds to block **608** at which the billboard segmenter **126** determines the event entry of the database that corresponds to the segment of the image **200**. For example, the billboard segmenter **126** determines that the first segment **202** corresponds with accessing a website.